APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,376	03/01/2002	John B. Duffie III	112025-0488	3382

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EXAMINER
DAFTUAR, SAKET K

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/087,376	DUFFIE ET AL.
	Examiner	Art Unit	
	Saket K. Daftuar	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1. This action is response to the amendment filed on July 11th, 2006. Claims 1-25 are presented for the further examination whereas claims 26-35 are newly added claims presented for the examination.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-16 and 23-25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 23 recites the limitation "the steps ". There is insufficient antecedent basis for this limitation in the claim. Applicant is suggested to make these claims parallel to claim 26.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Modi et

al, U.S. Patent Number 6,587,866 B1 (hereinafter Modi) in view of Walker U.S. Patent

No. 5,613,069.

As per claim 1, Modi discloses determining the size of the packet [see

column 13, line 64 – column 16, line 18, examiner interprets determining which

bucket to chose based on IP address packet size and when the user sends data,

the data is divided into packets discloses determining the size of the packet]; a

cost associated with the packet, the cost representing a load associated with

processing the packet [(see column 7, line 60 - column 8, line 15)]; determining

an anticipated load for each coprocessor in the plurality of coprocessors using

the cost [(see column 7, line 60 - column 8, line 15)]; and selecting the

coprocessor from the plurality of coprocessors based on the anticipated load

[(see column 2, lines 16-17, column 5, line 48 – column 8, line 67)].

Modi briefly discloses load balancing policy type and load balancing policy

weights for distributing packets to server nodes using network client affinity and

packet distribution table. However, Modi does not explicitly disclose determining

a packet size.

Walker explicitly teaches determining a packet size (see column 18, lines

7-67) in packet switching network.

Therefore, it would have bee obvious to one ordinary skilled in the art at

the time the invention was made to securely controlled dynamically switching and

distributing packets to the server based on their packet size and the cost associated with the packets.

As per claim 2, Modi discloses calculating the cost using a rate associated with processing the packet [(see column 1, lines 38-39)].

As per claim 3, Modi discloses the rate is stored in a lookup table [(see column 9, lines 34-38)].

As per claims 4 and 5, Modi discloses dividing the packet's size by the rate [(see column 15, lines 39-41)]. Modi also discloses the step of multiplying the packet's size by a multiplicative inverse of the rate [(see column 15, lines 39-41, examiner considers multiplicative inverse of the rate as mathematical expression "rate inverse" which is same as packet size dividing by rate)].

As per claim 6, Modi discloses applying the packet's size to a lookup table containing one or more cost values to determine the cost. [(See column 11, lines 12-20)]

As per claim 7, Modi discloses adding the cost to a cumulative load associated with each coprocessor in the plurality of coprocessors [(see column 1, lines 60-65)].

As per claim 8, Modi discloses selecting the coprocessor from a group of one or more coprocessors whose anticipated load is a minimum load [(see column 12, lines 52-53)].

As per claim 9, Modi discloses the coprocessor is selected using a scheduling algorithm [(see column 14, lines 23-25)].

As per claim 10, Modi discloses that determining if a port associated with the packet is congested [(see column 10, lines 56-58)].

As per claim 11, Modi discloses that selecting the coprocessor from a group of one or more coprocessors whose anticipated load is not a minimum load [(see column 10, lines 53-61, examiner considers Bucket not having forwarding list for node as particular node forwarding list is full and it's waiting for a node to make it available)].

As per claim 12, claim 12 falls under the same limitation of claim 8. Therefore, claim 12 has been rejected under same rationale.

As per claims 13 and 14, Modi discloses of incrementing a cumulative load associated with the selected coprocessor [(see column 1, lines 60-65)]. Modi also discloses adding the cost to the cumulative load [(see column 1, lines 60-65)].

As per claims 15 and 16, Modi discloses decrementing a cumulative load associated with the selected coprocessor [(see column 12 lines 54-59)]. Additionally, Modi also discloses subtracting the cost from the cumulative load [examiner consider deletion of connection and deleting service on particular nodes as removing service weight from that node].

As per claim 17, Modi discloses a memory containing one or more software routines, including a software routine configured to determine the size of the packet, a cost associated with the packet of that size, the cost representing a load associated with processing the packet [(see column 2, lines 37-42, column 13, line 64 – column 16, line 18)]; and a processor configured [(Server Node, see column 2, line 25)] to execute the software routines to determine an anticipated load for each coprocessor [(Nodes, see column 1, line 64)] in the plurality of coprocessors using the cost and to select the coprocessor from the plurality of coprocessors based on the anticipated load.

Modi briefly discloses load balancing policy type and load balancing policy weights for distributing packets to server nodes using network client affinity and packet distribution table. However, Modi does not explicitly disclose determining a packet size.

Walker explicitly teaches determining a packet size (see column 18, lines 7-67) in packet switching network.

Therefore, it would have bee obvious to one ordinary skilled in the art at the time the invention was made to securely controlled dynamically switching and distributing packets to the server based on their packet size and the cost associated with the packets.

As per claim 18, Modi discloses a data structure [(see column 4, lines 41)]; wherein the cost is determined using information contained in the data structure [(see column 7, lines 40-44)].

As per claim 19, Modi also discloses that the information contained in the data structure includes the cost [(see column 7, lines 51-54)].

As per claim 20, Modi discloses that the information contained in the data structure includes a rate the coprocessor can process the packet [(see column 7, lines 19-20)].

As per claim 21, claim 21 is device claim of method claim 1. They do not teach or further define over the limitation as recited in claim 1. Therefore, claim 21 rejected under same scopes as discussed in claim 1, supra.

As per claim 22, claim 22 is computer readable media claim of method claim 1. They do not teach or further define over the limitation as recited in claim 1. Therefore, claim 22 rejected under same scopes as discussed in claim 1, supra.

As per claims 23- 25, claims 23 – 25 are method claims of claims 1, 2-3 and 6. They do not teach or further define over the limitation as recited in claims 1, 2-3 and 6. Therefore, claims 23 – 25 are rejected under same scope as recited in claims 1, 2-3 and 6, supra.

As per claim 26, Modi discloses determining a cumulative load for each coprocessor, the cumulative load representing load due to packets currently awaiting processing at that coprocessor; determining a size of the received packet [see column 13, line 64 – column 16, line 18, examiner interprets

determining which bucket to chose based on IP address packet size and when the user sends data, the data is divided into packets discloses determining the size of the packet and determining a cumulative load for each processor]; determining a cost for processing the received packet at each coprocessor, the cost determined, at least in part, in response to the size of the received packet and a processing rate of that coprocessor [(see column 7, line 60 - column 8, line 15)]; combining the cumulative load and the cost at each coprocessor, to create an anticipated load for each coprocessor [(see column 1, lines 60-65) adding additional server nodes and performing load balancing between the nodes]; comparing the anticipated loads of all the coprocessors [(see column 2, lines 16-17, column 5, line 48 – column 8, line 67)]; and selecting, [forwarding the packets to various nodes [processor] based upon load balancing policies and other considerations as comparing the packets and selecting a particular processor based upon load balancing policies] in response to the comparing, a particular coprocessor of the plurality of coprocessors to perform the processing operation on the received packet [(see column 2, lines 16-17, column 5, line 48 – column 8, line 67)].

Modi briefly discloses load balancing policy type and load balancing policy weights for distributing packets to server nodes using network client affinity and packet distribution table. However, Modi does not explicitly disclose determining a packet size.

Walker explicitly teaches determining a packet size (see column 18, lines 7-67) in packet switching network.

Therefore, it would have bee obvious to one ordinary skilled in the art at the time the invention was made to securely controlled dynamically switching and distributing packets to the server based on their packet size and the cost associated with the packets.

As per claims 27, 28 and 29, they do not teach or further define over the limitation as recited in claims 8, 10-12, and 13-16, respectively. Therefore, claims 27, 28 and 29 are rejected under same scope as recited in claims 8, 10-12, and 13-16, supra.

As per claim 31, Modi discloses a data structure configured to store processing rates, each processing rate associated with one of the coprocessors [(see column 4, lines 41)]; and a processor configured to determine a size of the received packet, and in response to the size of the received packet [see column 13, line 64 – column 16, line 18, examiner interprets determining which bucket to chose based on IP address packet size and when the user sends data, the data is divided into packets discloses determining the size of the packet], and the processing rate of each coprocessor, determine a cost to perform a processing operation on the received packet at each coprocessor, the processor further configured to combine the cost at each coprocessor [(see column 7, line 60 - column 8, line 15)] with the cumulative load at that coprocessor to create an

anticipated load at each coprocessor, and to select a particular coprocessor to perform the processing operation on the received packet in response to comparison of the anticipated load at each coprocessor [(see column 2, lines 16-17, column 5, line 48 – column 8, line 67)].

Modi briefly discloses load balancing policy type and load balancing policy weights for distributing packets to server nodes using network client affinity and packet distribution table. However, Modi does not explicitly discloses determining a packet size and a plurality of queues configured to store packets currently awaiting processing, each queue associated with one of the coprocessors, each queue associated with a cumulative load that represents a load to process packets in that queue.

Walker explicitly teaches determining a packet size (see column 18, lines 7-67) in packet switching network and a plurality of queues configured to store packets currently awaiting processing, each queue associated with one of the coprocessors, each queue associated with a cumulative load that represents a load to process packets in that queue [see column 14, lines 50-65] .

Therefore, it would have bee obvious to one ordinary skilled in the art at the time the invention was made to securely controlled dynamically switching and distributing packets to the server based on their packet size and the cost associated with the packets.

. As per claims 32, 33 and 34, they do not teach or further define over the limitation as recited in claims 8, 10-12, and 13-16, respectively. Therefore, claims

32, 33, and 34 are rejected under same scope as recited in claims 8, 10-12, and
13-16, supra.

6.   Claims 30 and 35 are.rejected under 35 U.S.C. 103(a) as being unpatentable
over Modi in view of Walker as applied to claims 1-29 and 31-34 above, and further in
view of Feinberg et al, U.S. Patent No. 6,065,046 (hereinafter Feinberg).

As per claim 26, Modi in view of Walker discloses determining a
cumulative load for each coprocessor, the cumulative load representing load due
to packets currently awaiting processing at that coprocessor; determining a size
of the received packet; determining a cost for processing the received packet at
each coprocessor, the cost determined, at least in part, in response to the size of
the received packet and a processing rate of that coprocessor; combining the
cumulative load and the cost at each coprocessor, to create an anticipated load
for each coprocessor; comparing the anticipated loads of all the coprocessors;
and selecting, in response to the comparing, a particular coprocessor of the
plurality of coprocessors to perform the processing operation on the received
packet.

However, neither Modi nor Walker discloses an encryption operation for
processing packets.

Feinberg teaches the processing operation is an encryption operation (see
column 5,lines 21-67)

Therefore, it would have bee obvious to one ordinary skilled in the art at
the time the invention was made to securely controlled dynamically switching and

distributing packets to the server based on their packet size and the cost associated with the packets.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.   Accordingly, **THIS ACTION IS MADE FINAL**.   See MPEP § 706.07(a).   Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action.   In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.   In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saket K. Daftuar whose telephone number is 571-272-8363. The examiner can normally be reached on 8:30am-5:00pm M-W.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SKD

JEFFREY PWU
PRIMARY EXAMINER